

REMARKS

Claims 44 and 46-51 are pending in this application. By this Amendment, claims 16, 26, 33, and 34 are canceled. No new matter is added. Reconsideration of the application is respectfully requested.

I. Claims Define Patentable Subject Matter

In the April 19, 2006 Office Action, claims 16, 26, 33, and 34 are rejected under 35 U.S.C. § 103(a) over *Travis* (U.S. Patent No. 5,132,839) in view of Sudo et al. (U.S. Patent No. 6,798,390). The cancellation of claims 16, 26, 33, and 34 renders the rejection moot. Claims 44 and 46-51 are rejected under 35 U.S.C. § 103(a) over *Travis* in view of Hattori et al. (U.S. Patent No. 5,689,316; hereinafter *Hattori*). This rejection is respectfully traversed.

A. Claims 44, 46-48, and 51 are Patentable Over Cited Prior Art

Regarding independent claim 44, Applicant asserts that *Travis* and *Hattori*, individually or in combination, fail to teach or suggest a three-dimensional image display including at least two-dimensional image forming means for forming a plurality of two-dimensional images by scanning light which has been subjected to time-modulation based on information on rearrangement of data of each of pixel of the plurality of two-dimensional images, as recited in independent claim 44.

Travis discloses a three dimensional video display apparatus that uses a backlighting apparatus for projecting beams of light in selected directions and a spatial light modulator for displaying images back-lit by the backlighting apparatus (*Travis*, abstract). The video display apparatus in *Travis* uses spot sources of light or vertical line sources of light, such as a cathode ray tube, an array of light emitting diodes, or a laser, as the backlighting apparatus (*Travis*, col. 3, ll. 9-20; col. 4, ll. 62-65; col. 9, ll. 3-19).

However, *Travis*'s video display apparatus causes multiple images of an object to be formed in succession on the spatial light modulator (e.g., a liquid-crystal display), which contains arrays of pixels to present the images, with each image being viewable only from particular angles (*Travis*, abstract; col. 4, ll. 53-59; col. 5, ll. 8-35). Accordingly, *Travis* fails to teach or suggest a three-dimensional image display including at least the two-dimensional image forming means having the same structure or equivalent structure as recited in independent claim 44 and described in the Specification, for example, in Figs. 85-94 and corresponding disclosures.

Furthermore, the Office Action on page 4, lines 5-7, admits that *Travis* does not disclose "where the scanning light has been subjected to time-modulation based on the information on rearrangement of data of each of pixel of the plurality of two-dimensional images," as recited in claim 44. Therefore, *Travis*'s video display apparatus, which forms images on the spatial light modulator, does not disclose a three-dimensional image display including at least two-dimensional image forming means for forming a plurality of two-dimensional images by scanning light which has been subjected to time-modulation based on information on rearrangement of data of each of pixel of the plurality of two-dimensional images, as recited in independent claim 44.

Next, the Office Action alleges that *Hattori* cures the deficiencies of *Travis* by teaching "where the scanning light has been subjected to time modulation based on the information on rearrangement of data of each of the pixel of the plurality of two-dimensional images" (Office Action, pg. 4, ll. 7-9). Applicant respectfully disagrees.

Hattori discloses a depth sampling three-dimensional display that contains a stack of liquid crystal elements for passing collimated light without inducing refraction or diffraction (*Hattori*, abstract). In *Hattori*, the collimated light is projected toward and passed through the stack of liquid crystal elements, in which each of the elements displays a depth-sampled

planar image, thus forming a three-dimensional image to a spectator seated in front of the liquid crystal elements (*Hattori*, col. 2, ll. 50-54; col. 3, ll. 3-40). Therefore, *Hattori* does not disclose a three-dimensional image display including at least a two-dimensional imaging forming means for forming a plurality of two-dimensional images by scanning light having the same structure or equivalent structure as recited in independent claim 44 and described in the Specification, for example, in Figs. 85-94 and corresponding disclosures.

Moreover, the liquid crystal elements in *Hattori*, which may be transmission-type spatial modulating elements, enable the formation of the three-dimensional image by forming planar (i.e., two dimensional) images via electro-optical control means. The collimated light projecting means in *Hattori* is not affected or controlled by pixel data of the planar images. In other words, *Hattori*'s collimated light projecting means generates and projects the collimated light without modulating the collimated light based on the planar images. Therefore, *Hattori* fails to cure the deficiencies of *Travis* because *Hattori* does not disclose a three-dimensional image display including at least two-dimensional image forming means for forming a plurality of two-dimensional images by scanning light which has been subjected to time-modulation based on information on rearrangement of data of each of pixel of the plurality of two-dimensional images, as recited in independent claim 44. Accordingly, a combination of *Travis* and *Hattori* would not arrive at the subject matter as recited in claim 44.

Furthermore, the combination of *Travis* and *Hattori* is not proper. *Hattori* teaches projecting the collimated light in the same direction through the liquid crystal elements that display the planar images (*Hattori*, Figs. 1, 2, and 4-6). In contrast, *Travis* teaches projecting multiple two-dimensional images in directions different from each other (*Travis*, col. 2, ll. 54-59; col. 5, ll. 18-35; Figs. 2a, 2b, 5, and 7-9). Accordingly, modifying the apparatus of

Travis in view of *Hattori* to teach the combination of features as recited in claim 44 would not have been obvious because the references teach away from each other.

In accordance with the above remarks, Applicant submits that independent claim 44 defines patentable subject matter. Claims 46-48 and 51 depend from claim 44, and therefore, also define patentable subject matter, as well as for the additional features they recite. Therefore, Applicant respectfully requests the withdrawal the § 103(a) rejection of claims 44, 46-48, and 51.

B. Claims 49 and 50 are Patentable Over Cited Prior Art

Regarding independent claim 49, Applicant asserts that *Travis* and *Hattori*, individually or in combination, fail to teach or suggest a three-dimensional image display including at least three-dimensional image forming means for forming a three-dimensional image by projecting the light emitted by the two-dimensional image forming means in different directions in accordance with positions of incidence to project the plurality of two-dimensional images in directions different from each other, wherein the three-dimensional image forming means has a region in which position information used for controlling the positions of incidence of the light emitted by the two-dimensional image forming means is recorded, as recited in independent claim 49.

As previously discussed, *Travis*'s video display apparatus causes multiple images of an object to be formed in succession on the spatial light modulator that contains arrays of pixels to present the images (*Travis*, abstract; col. 4, ll. 53-59; col. 5, ll. 8-35). However, *Travis* does not teach or suggest a three-dimensional image display including at least three-dimensional image forming means for forming a three-dimensional image by projecting the light emitted by the two-dimensional image forming means in different directions in accordance with positions of incidence to project the plurality of two-dimensional images in directions different from each other, wherein the three-dimensional image forming means has

a region in which position information used for controlling the positions of incidence of the light emitted by the two-dimensional image forming means is recorded, as recited in claim 49. Accordingly, *Travis* fails to teach or suggest a three-dimensional image display as recited in independent claim 49. *Hattori* also fails to teach or suggest a three-dimensional image display as recited in independent claim 49. Therefore, *Hattori* fails to cure the deficiencies of *Travis*, and a combination of *Travis* and *Hattori* would not arrive at the subject matter as recited in claim 49.

Moreover, as previously asserted, the combination of *Travis* and *Hattori* is not proper. Accordingly, modifying the apparatus of *Travis* in view of *Hattori* to teach the combination of features as recited in claim 49 would not have been obvious because the references teach away from each other.

In accordance with the above remarks, Applicant submits that independent claim 49 defines patentable subject matter. Claims 50 depend from claim 49, and therefore, also define patentable subject matter, as well as for the additional features they recite. Therefore, Applicant respectfully requests the withdrawal the § 103(a) rejection of claims 49 and 50.

II. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 44 and 46-51 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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